

FIG. 1

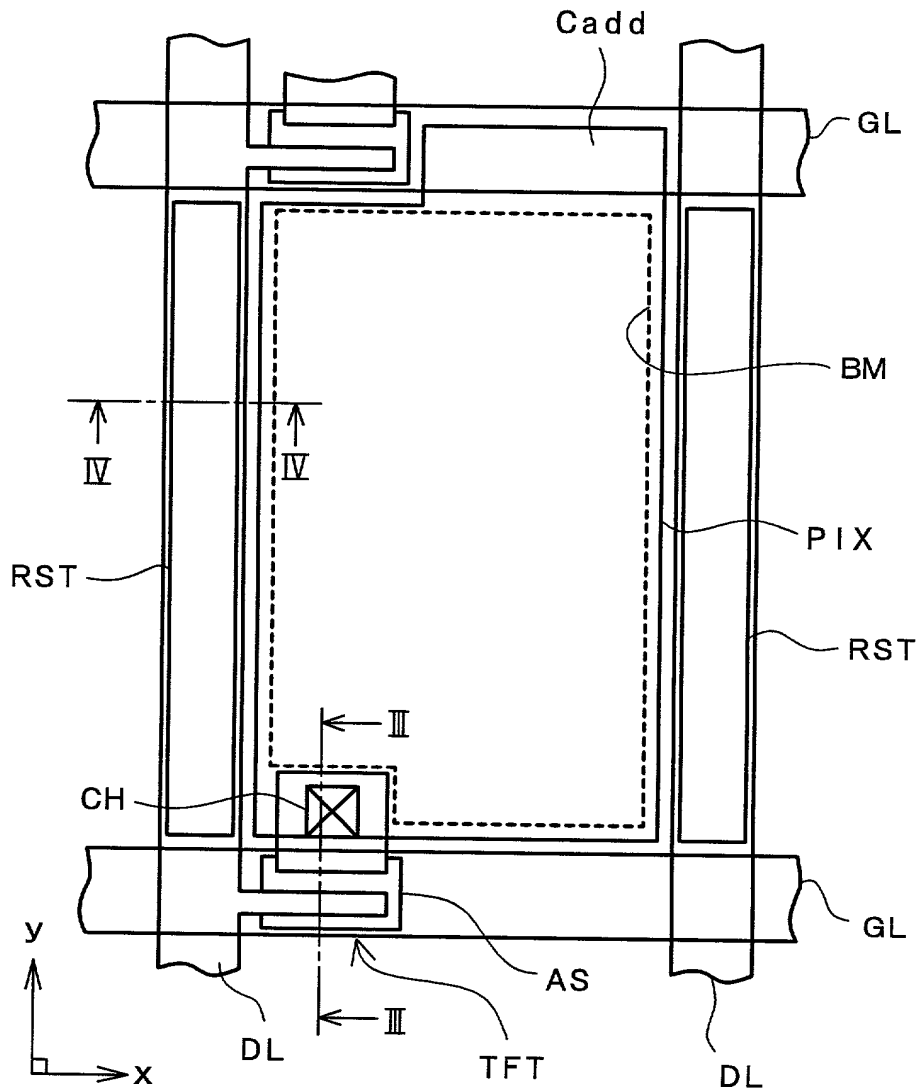


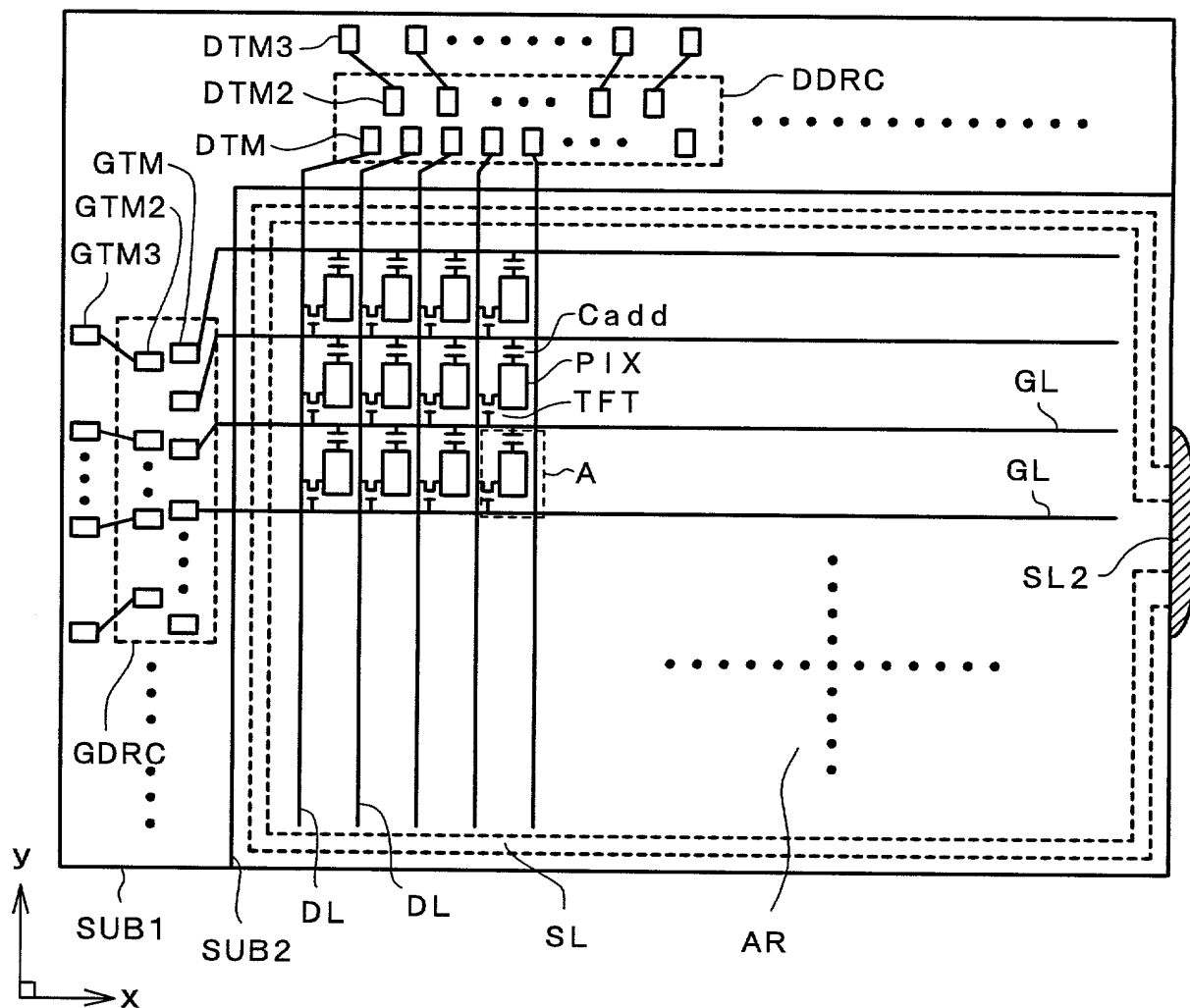
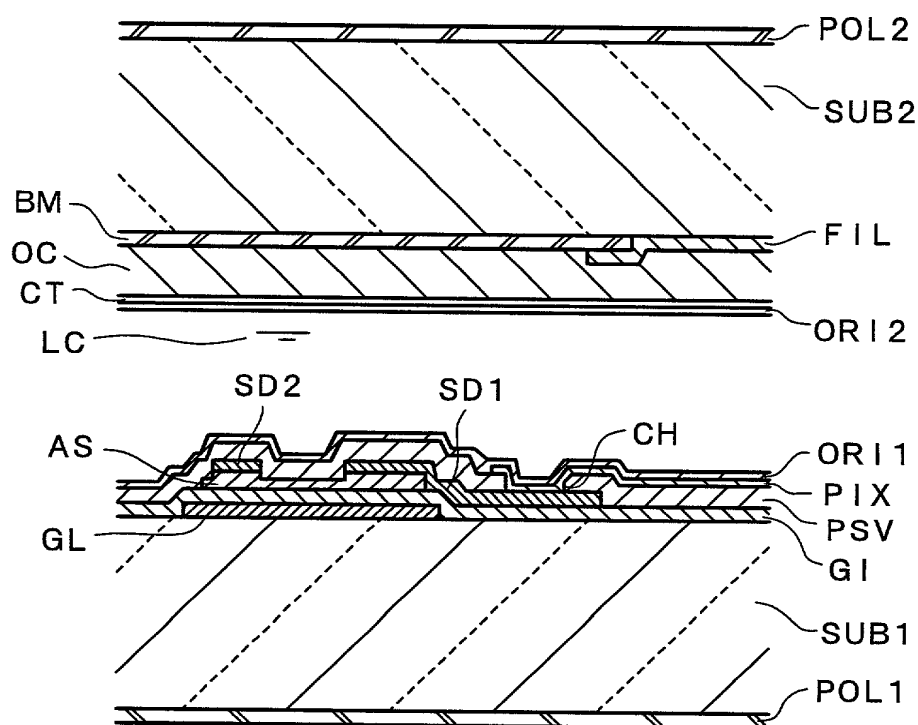
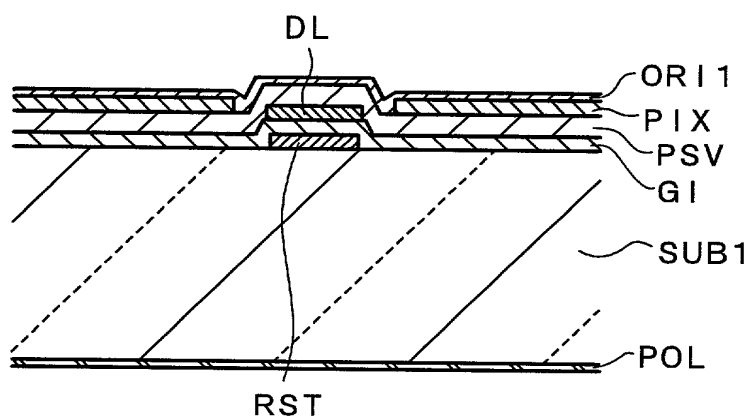
FIG. 2

FIG. 3**FIG. 4**

A cross-sectional view of a semiconductor device. At the top is a horizontal line labeled GL. Below it is a complex gate structure. The main body of the device consists of a central vertical channel region labeled AS, which is shaded with diagonal lines. This channel is flanked by two vertical regions labeled IL. Above the IL regions are two regions labeled DL. To the right of the IL regions is a region labeled PIX. At the bottom, there is a horizontal line labeled RST. Two vertical lines extend from the RST line up to the IL regions. Two arrows labeled 'b' indicate the width of the IL regions. A small circular feature is visible at the bottom center, between the two IL regions.

A cross-sectional view of a semiconductor device. The substrate is labeled SUB1. A gate insulator (GI) is formed on the substrate. A gate (DL) is formed on the GI. The gate is divided into regions labeled IL, RST, AS, and PIX. The RST region is shaded with diagonal lines. The PSV region is the space between the gate and the substrate.

FIG. 8